

(fires mostly passed beneath the trees). Forests in the Sierra Juárez were only selectively logged near Laguna Juárez. Sierra San Pedro Mártir forests have never been logged.

The scale of photographs will not permit identification of possible hybrids between *Pinus jeffreyi* and *P. coulteri* (Zobel, *Evolution* 5:405–413. 1951; Madroño 11:283–284. 1952). However, with the exception for stands above Laguna Juárez, all *P. coulteri* populations are far from *P. jeffreyi* forests. In cursory field observations at Laguna Juárez, I found that the trees occur in ecologically divergent habitats in a characteristic pattern of southern California. *Pinus jeffreyi* occurs on basin floors whereas *P. coulteri* covered chaparral slopes on ridges above. I saw no intermediates.—RICHARD A. MINNICH, Geography Program, Dept. Earth Sciences, Univ. California, Riverside 92521. (Received 4 Apr 1985; revision accepted 13 Nov 1985.)

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TAXONOMY OF OREGON SEMAPHORE GRASS, *Lophochlaena oregona* (POACEAE).—The taxonomic status of Oregon semaphore grass remains unsettled. The first collection of the grass in 1886 by W. C. Cusick was misidentified as *Lophochlaena californica* Nees [*Pleuropogon californicus* (Nees) Benth. ex Vasey], which explains why Vasey (*U.S.D.A. Bull.* 13(2):1–207. 1893) reported that the latter species occurred also in Oregon. After two more collections were made in 1901 and 1927, its distinct specific status was recognized by Chase (*J. Wash. Acad. Sci.* 28:52–53. 1938), who named it *Pleuropogon oregonus*. Her treatment was accepted by Benson (*Amer. J. Bot.* 28:358–360. 1941) and by Hitchcock et al. (*Vascular Plants of the Pacific Northwest. Part I*, Univ. Wash. Press, Seattle. 1969). Löve and Löve (*Bol. Soc. Brot. Sér. 2*, 53:563–585. 1980) suggested, however, that the taxon is merely a genetic variant of *Lophochlaena refracta* A. Gray [*Pleuropogon refractus* (A. Gray) Benth. ex Vasey]. Their arguments were that (1) a short awn, characteristic of *L. oregona*, was observed on the palea in an individual of the progeny obtained from sowing a plant of *L. refracta* from the Olympic Peninsula, and (2) the taxon could not be rediscovered anywhere in nature after its description.

With the rediscovery of Oregon semaphore grass in Adel, OR (But et al., Madroño 32:189–190. 1985), it is possible to reevaluate its taxonomic status. This grass can be distinguished readily from *L. refracta* by a combination of the following characters: (1) lemmas shorter, 5.5–7 mm long, and prominently scabrous-nerved, (2) palea margins distinctly and consistently bearing an awn 5–12 mm long, (3) spikelets gynomonocious with a special kind of flowering pattern, and (4) caryopses oval and smaller, 2.5–3 mm long. I am of the opinion that Oregon semaphore grass should be treated as specifically distinct from *L. refracta*.

Löve (*Taxon* 27:375–392. 1978) and Löve and Löve (*ibid.*) redefined *Pleuropogon* as a monotypic genus consisting solely of an arctic-circumboreal species, *P. sabinii* R. Brown, and referred the western cordilleran species to *Lophochlaena* Nees. Stebbins (*In* Jorgensen et al., *Biol. Skr.* 9(4):1–172. 1958), Tateoka (*Bull. Natl. Sci. Mus.* 12: 161–163. 1965), and Tsvelev (*Grasses of the Soviet Union, Part II*: 545. 1976. Engl. translation 1983) also suggested similar treatment. Concurring with the narrower generic concept of these authors, I propose the following combination:

***Lophochlaena oregona* (Chase) But comb. nov.**—*Pleuropogon oregonus* Chase, *J. Wash. Acad. Sci.* 28:52. 1938.—TYPE: USA, Oregon, Union Co., Union, 8 Jun 1901, *Leckenby s.n.* (Holotype: US!).

*Representative specimens.* USA: OREGON: Union Co., Hog Valley, probably near Union, 1886, *Cusick 1316* (ORE, US); Lake Co., 25.8 km w. of Adel, 29 Jun 1937, *Peck 19568* (WILLU); Mud Creek, 25 km w. of Adel on Hwy. 140, 4 Jun 1979,

*Kagan 604812* (ORE); 3 Jun 1982, *Crosby 2651* (CUHK, OSC); 11 Jul 1983, *But 83-2* (A, CUHK, IBSC, K, UC, US).

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NOTES ON *Betula* SER. *Humiles* (BETULACEAE) IN IDAHO.—The shrubby members of the genus *Betula* (series *Humiles*) have long been a source of taxonomic uncertainty and debate. Members of this group from the Pacific Northwest have been treated variously as four species, two varieties of a single species, or two species. Butler (Bull. Torr. Bot. Club 36:421–440. 1909) recognized four species from the region: *B. glandulosa* Michx., *B. glandulifera* (*B. pumila* L. var. *glandulifera* Regel—references cited below), *B. hallii* Howell, and *B. crenata* Rydb.; the latter known only from the type locality in western Montana. Hitchcock (in *Vascular Plants of the Pacific Northwest*, Pt. 2, Univ. Wash. Press, Seattle. 1964) included all of the variation in the region under two varieties of *B. glandulosa* (var. *glandulosa* mostly from east of the Cascades, and var. *hallii* from the Cascades and west). He noted, however, that occasional specimens from Idaho, Montana, eastern Washington, and Wyoming represented perhaps a third variety. More recent workers have recognized the presence of both *B. glandulosa* and *B. pumila* var. *glandulifera* in various portions of the northern Rocky Mountains (Brayshaw, *Catkin bearing plants of British Columbia*. 1976; Scoggan, *Flora of Canada*. 1978; Moss, *Flora of Alberta*, 2nd ed. 1983; Dugle, *Can. J. Bot.* 44:929–1007. 1966, who recognized *B. glandulifera*). The identity of many Idaho specimens, however, has remained uncertain.

*Betula pumila* var. *glandulifera* is recognized generally by its broad samara wings (>½ as broad as the body), obovate leaves with more than 10 teeth on each side, and stature up to 4 m. *Betula pumila* is tetraploid,  $2n = 56$  (Woodworth, *Bot. Gaz.* 90:108–115. 1930).

In contrast, *B. glandulosa* has narrow samara wings (<½ as broad as the body), broadly ovate to orbicular leaves with less than 10 teeth on each side, and is generally less than 2 m tall. *Betula glandulosa* is diploid,  $2n = 28$  (Packer, *Can. J. Bot.* 42:473–494. 1964).

In 1982, we discovered 5 populations of birch in extreme northern Idaho that match closely the published descriptions of *B. pumila* var. *glandulifera* (as summarized above). Two representative localities are: Boundary Co., swamp/fen at nw. end of Bonner Lake, 15 km ene. of Bonners Ferry, T62N R3E S18, 760 m, 31 Jul 1982, *Johnson and Brunsfeld 1962* (ID, IDF, V); swamp/fen on e. shore of Perkins Lake, 18 km ene. of Bonners Ferry, T62N R3E S5, 800 m, 29 Oct 1982, *Brunsfeld 2009* (ID, IDF, V). The identification of both of these collections was verified by T. C. Brayshaw (V). This is the first report of this species in Idaho.

For further confirmation of this identification, we germinated seed and made mitotic chromosome counts of root tip cells following procedures outlined by Soltis (*Syst. Bot.* 5:17–19. 1980). Two counts were obtained from populations in Boundary Co.: 1)  $2n = 56$ , Perkins Lake, *Brunsfeld 2009*; 2)  $2n =$  ca. 56, Skin Cr., 2.5 km n. of Perkins Lake, *Brunsfeld 2015* (ID, IDF). Camera lucida drawings and photomicrographs are on file with the authors. These counts are the first reported for *B. pumila*